

IN THE CLAIMS

1. (currently amended)

A permalloy sensor device for sensing low magnetic field levels having high sensitivity, comprising:

a substrate and a sensor on said substrate, said sensor having a first surface, said first surface having a magnetic wafer level anisotropy in a given direction; and

a permalloy resistor pattern of individual runners ~~deposited on~~ patterned in said first surface such that the mechanical length of each of said individual runners is perpendicular to the magnetic wafer level anisotropy to cause said sensor to have an anisotropy of about 90°.

2. (original)

The device of claim 1, wherein said permalloy is deposited as a thin film.

3. (original)

The device of claim 2, wherein said substrate is a silicon wafer.

4. (currently amended)

A permalloy sensor for sensing low magnetic field levels having high sensitivity, comprising:

substrate means for forming the body of a sensor and having a first surface, said first surface having a magnetic wafer level anisotropy in a given direction; and

permalloy resistor pattern means for providing individual runners ~~deposited on~~ patterned in said surface such that the mechanical length of each of said individual runners is perpendicular to the magnetic wafer level anisotropy to cause said sensor to have an anisotropy of about  $90^\circ$ .

5. (original)

The of claim 4, wherein said permalloy is deposited as a thin film.

6. (original)

The of claim 5, wherein said substrate is a silicon wafer.

7. (currently amended)

A method of forming a permalloy sensor for sensing low magnetic field levels including the steps of:

providing a substrate and a sensor on said substrate, said sensor having a first surface, said first surface having a magnetic wafer level anisotropy in a given direction; and

~~depositing~~ patterning in a permalloy resistor pattern of individual runners on said surface such that the mechanical length of each of said individual runners is perpendicular to the magnetic wafer level anisotropy to cause said sensor to have an anisotropy of about  $90^\circ$ .